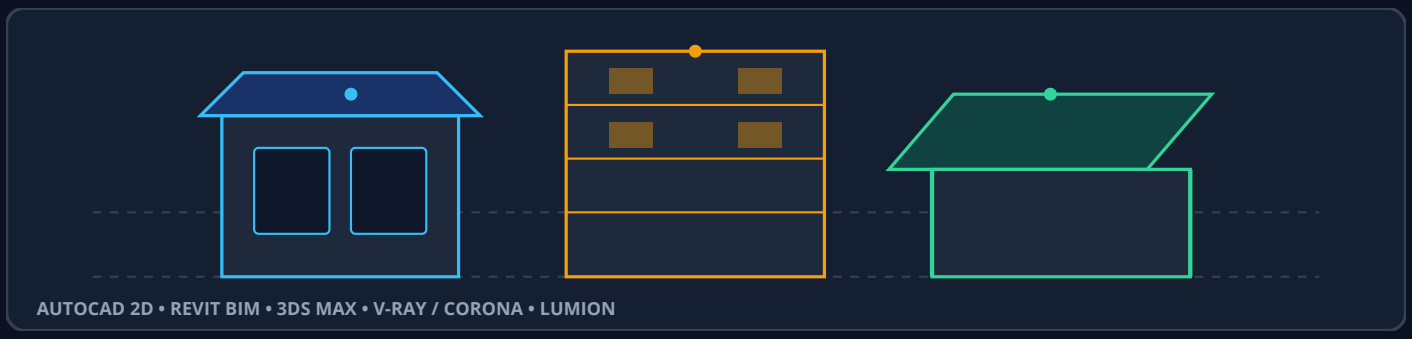
OneTick
Career Development Center

OFFICIAL PROGRAM SYLLABUS

SPATIAL PLANNING, BIM & PHOTOREALISTIC VISUALIZATION

Architectural Design & 3D Visualization Master Track

Master end-to-end architectural workflows: from 2D drafting, structural municipal layouts, and BIM documentation to photorealistic 3D interior/exterior rendering, ray-tracing, and cinematic walkthroughs.



AUTOCAD 2D • REVIT BIM • 3DS MAX • V-RAY / CORONA • LUMION

6 Months	CAD + BIM	Ray-Tracing	100%
COMPREHENSIVE PROGRAM	INDUSTRY STANDARDS	V-RAY & CORONA	PLACEMENT SUPPORT

TARGET ARCHITECTURAL CAREER PATHWAYS

Architectural Draftsman • BIM Modeler & Technician • 3D Architectural Visualizer • Interior Design Modeler • Landscape & Facade Artist • Real Estate Rendering Consultant

MODULES 01 & 02

Architectural CAD & Municipal Drafting

Precision Working Drawings, Blueprints, Standards, and Structural Elevations

01. Technical Architectural Drafting (AutoCAD 2D)

Develop technical proficiency in producing compliant, execution-ready architectural working drawings adhering to national building codes and construction standards.

- **Floor Plans & Wall Layouts:** Layer management, load-bearing walls, partition dimensions, and door/window schedules.
- **Elevations & Longitudinal Sections:** Ground levels, plinth beam heights, floor-to-floor clearances, and parapet walls.
- **Site & Setback Planning:** FAR (Floor Area Ratio) calculations, municipal setbacks, and landscape boundaries.
- **Electrical & Plumbing Overlays:** Conduit routing, switchboard placement, sanitary plumbing stacks, and drainage drops.

02. Construction Documentation & Municipal Approvals

Learn how architects prepare sanction drawings and working details for on-site structural engineers and contractors.

Joinery & Interior Working Details

- Door/window frame rebates, sill & lintel details.
- False ceiling structural cross-sections & cove details.
- Staircase structural tread-riser engineering calculations.

Title Blocks & Sheet Setups

- Plotting scales: 1:100, 1:50, and 1:20 detail callouts.
- Standard architectural title sheets, north points, and revisions.
- Batch PDF plot management & drawing register control.

DRAFTING SOFTWARE: Autodesk AutoCAD 2026 | Architecture Toolset | DWG TrueView | National Building Code (NBC)

MODULE 03

BIM Modeling & Parametric Architecture

Building Information Modeling with Autodesk Revit for Modern Design Practices

03. Building Information Modeling (BIM Workflows)

Transition from 2D drafting to intelligent, data-rich 3D Building Information Modeling. Generate coordinated structural, MEP, and architectural models with automated schedules.

BIM COMPONENT	PARAMETRIC PARAMETERS & WORKFLOWS	ARCHITECTURAL OUTPUT
Walls, Slabs & Roofs	Layered composite assemblies (brick, insulation, concrete, plaster)	Instant thermal, material, and structural section callouts.
Curtain Wall Systems	Custom mullion profiles, glazed panel subdivisions, spiders	Commercial facade systems and frameless glass facades.
Custom Revit Families	Parametric dimension constraints (length, width, materials)	Bespoke casework, doors, columns, and sanitary fixtures.
Automated BOQ & Schedules	Material takeoff quantities, wall areas, window counts	Real-time cost estimation and material procurement sheets.
Topography & Site Modeling	Contour mapping, subregions, building pads, retaining walls	Site grading, cut-and-fill calculations, and landscape design.

Phasing & Clash Detection

- **Project Phasing:** Demolition, existing structure, and new proposed construction phases.
- **Clash Coordination:** Detecting beam/column clashes with plumbing and HVAC ducts.

Annotation & View Generation

- **Live Views:** Any modification in plan automatically updates 3D views, sections, and schedules.
- **Sun Studies & Shadows:** Interactive solar analysis for climatic orientation.

BIM TOOLSET: Autodesk Revit Architecture | Revit Family Editor | Navisworks Basics

MODULE 04

3D Architectural Modeling & Ray-Tracing

Photorealistic Lighting, Global Illumination & Material Physics(3dsMax / V-Ray / Corona)

04. Advanced Spatial Modeling & Shading Pipelines

Complex Geometry & Interior Modeling

- **3ds Max Hard-Surface Modeling:** Poly-modeling high-end residential interiors, false ceilings, and parametric facade panels.
- **Furniture & Decor Detailing:** Modular kitchens, upholstered couches, fabric folds, and decor styling.
- **Landscape & Foliage Scattering:** ForestPack / Chaos Scatter for grass, trees, and gravel paths.

Photorealistic Lighting & Shaders

- **Physical Sun & HDRI Dome Rigs:** Accurate geographic sun angles, golden hour warmth, overcast skies, and night scenes.
- **IES Photometric Light Profiles:** Exact architectural downlights, wall-washers, and cove LED profiles.
- **PBR Shading:** Italian marble, hardwood parquet, frosted glass, brushed metals, and fabric SSS.

Physical Camera Composition

- **Two-Point Perspective Correction:** Automatic vertical tilt shift for distortion-free building facades.
- **Focal Lengths & Depth of Field:** 18-24mm for wide spatial views; 50-85mm for vignette detail shots.
- **Exposure & ISO Balancing:** Shutter speed and aperture controls for noise-free renders.

Render Optimizers

- **V-Ray & Corona Denoiser:** AI-powered noise reduction.
- **Proxy Meshes:** Rendering billions of polygons without memory bottlenecking.

VISUALIZATION SUITE: Autodesk 3ds Max | Chaos V-Ray | Chaos Corona | Quixel Megascans

MODULE 05 & CAPSTONE

Cinematic Walkthroughs, Lumion & Portfolio

Real-Time Fly-Throughs, Compositing & Studio-Ready Architecture Portfolios

05. Real-Time Renders & Architectural Walkthroughs

- **Real-Time Engines (Lumion / Enscape / D5):** Live-sync with Revit/CAD, dynamic weather, wind-blown trees, and flowing water.
- **Animated Cinematography:** Drone flyovers, crane shots, walking camera rigs, and slow-motion pans.
- **Post-Production Compositing (Photoshop):** Multi-pass render elements (Ambient Occlusion, Reflection, Z-Depth, Cr yptomat te).
- **Video Reel Assembly (Premiere Pro):** 4K video editing, color grading, background audio sync, and title branding.

CAPSTONE ARCHITECTURAL PORTFOLIO (3 Industry-Grade Projects)

PROJECT 1
Luxury Residential Villa

Complete CAD working drawings, full Revit BIM model, interior daylight/night photorealistic renders, and landscape staging.

PROJECT 2
Commercial Complex Facade

Glass curtain-wall structural detailing, parametric louvers, exterior street lighting, and clash-coordinated BIM documentation.

PROJECT 3
4K Cinematic Walkthrough Reel

60-second high-definition animated architectural tour complete with animated vehicles, people, camera cuts, and presentation titles.

PROFESSIONAL PRACTICE & CLIENT PRESENTATION

Students graduate with a printed architectural folio and online showcase (Behance / Issuu / LinkedIn) formatted according to standards followed by leading architecture and design studios.

CAREER ECOSYSTEM & ADMISSIONS

The Onetick Advantage & Enrollment

Launch Your Professional Career with Industry-Grade Architecture Training

PROGRAM EXECUTION ROADMAP

1 Step 1: CAD Drafting, Building Codes & Working Drawings (Weeks 1–8)

Master2Dplanproduction,municipalsanctionsheets,elevations,sections,electrical/plumbing drawings, and layout plotting.

2 Step 2: Revit BIM Modeling, Parametric Families & BOQ (Weeks 9–16)

BuildcoordinatedBIMmodels,curtainwalls,parametricfamilies,automatedquantity schedules, and site topography.

3 Step 3: 3D Visualization, Lumion Walkthroughs & Portfolio (Weeks 17–24)

Author V-Ray/Coronaphysicalshaders,directcinematicLumionwalkthroughs,compileportfolios, and participate in campus hiring drives.

High-End GPU Lab Workstations

- Dedicated workstations equipped with high-capacity NVIDIA RTX Ray-Tracing GPUs.
- Zero viewport lag with dense polygon models and BIM coordination files.
- In-house render farm support for real-time and multi-frame walkthroughs.

Dedicated Placement Cell

- Direct hiring tie-ups with architectural firms, interior studios, and real-estate developers.
- Technical portfolio reviews, mock interview drills, and career mentoring.
- Lifelong alumni support for career advancement and freelancing guidance.

Admissions & Campus Inquiries

Onetick CDC
E-1/74, Sector 11, Near YMCA University Street (Back Gate),
Faridabad, Haryana 121006

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